$2.00

Mountain Computer
INCORPORATED

Product Catalog

October 1982

Mountain™ Computer
INCORPORATED

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The Hard Disk Systems with quality and performance . . . . . . at an affordable price!

The Mountain Computer hard disk systems for the Apple II and the IBM P.C. offer the latest in 5¼" Winchester Technology combined with the unique Mountain Virtual File System (MVFS).

Available soon for other personal computers.

DYNAMIC Disk Systems

Features and Specifications

Features

- The Dynamic Disk offers 30-90 times the capacity, 2-10 times the speed, and is more reliable than a floppy disk.
- Menu driven, user friendly software.
- Built in transparent error checking and correction that provides virtually error free storage.
- Full 6 month warranty made possible through the use of Seagate drives.
- Utility software is included to back-up selected volumes or the entire disk to floppy disks.

Apple II® Highlights

- The MVSF software uses dynamic volume allocation which makes available up to 50% more disk space than competitive units.
- Dynamic Volume Allocation— Each Dynamic Disk can be partitioned into one volume or as many as 65,534 volumes. DOS volumes can be allocated as large as 400K bytes, almost triple the floppy volume size. CP/M® and PASCAL can be as large as the disk.
- Volume characteristics (such as size, name, etc.) can be changed anytime after the volume is created.
- Up to 8 volumes can be mounted at any time which is analogous to having eight floppy drives on a system.
- Automatically boots up with a

default volume which determines the operating system and the corresponding 7 mounted volumes. This insures effortless installation and operation.

- Volumes for DOS, CP/M®, and PASCAL can be intermixed on the same drive. Only 1 copy of each operating system is stored on the disk.
- Accessible through machine language and PASCAL unit for those tough jobs.
- On-board RAM and ROM provide superior throughput and do not impact user memory.

IBM® P.C. Highlights

- Compatible with DOS.
- Totally self-contained unit, no need to "plug it in."

Applications

Business—General Accounting, Job Costing, Surveys, Data Bases.
Education—Grading, Attendance Reporting, Administration

Specifications

Capacity (MBytes)	Model 5M	Model 10M	Model 15M
Unformatted	6.4	12.76	19.14
Formatted	5	10	15
Heads	2	4	6
Discs	1	2	3
Tracks	612	1224	1836

All Models - Drive Specifications

Sectors per track	32
Bytes per sector	256
Transfer rate (MBits/sec.)	5

Access time (ms)	
Track to Track	3
Average	85
Maximum	205
Settling time	15
Latency	8.33
Drives per controller	2

Functional	
Rotation Speed (RPM)	3600
Recording Density (BPI)	9074
Flux Density (FCI)	9074
Track Density (TPI)	345
Cylinders	306

Error Rates	
Soft (bits read)	1 per 10^{10}
Hard (bits read)	1 per 10^{12}
Seek errors (seeks)	1 per 10^{6}

Reliability	
MTBF (POH, typ. use)	11,000
Prevent. Maint.	None
MTTR (minutes)	30
Component design life (yrs)	5

Environmental Limits (operational)	
Ambient Temp	40° to 122° F
	4° to 50° C
Relative Humidity	8 to 80%
Max. Wet Bulb	78°F (25.5° C non condensing)

Power Requirements	
Voltage (VAC)	110/220
Frequency (Hz)	50/60
Amps (Max)	1

Dimensions	
Width (6.125 in.)	15.6 cm
Height (7.65 in.)	19.5 cm
Depth (11.1 in.)	28.2 cm
Weight (21 lbs.)	9.6 kg.
Warranty	6 months

Items included—disk, controller, power supply, cabinet, interface card, cabling, and diskette with the Mountain Virtual File System software and file support utilities.

1

Low Cost Data Collection and Entry.

The 1100A optical card reader is designed to meet the needs of the burgeoning micro-computer and minicomputer markets. The small, quiet, and rugged desktop unit provides an extremely cost effective means of data entry. The RS-232C interface allows interaction with virtually any computer, either directly or remotely through a modem.

Model 1100A

Features and Specifications

Features

- Cards can contain any combination of pencil marks, punched holes, and printed marks. Data may be marked with an ordinary soft lead pencil.
- It will read user defined cards that can contain a variety of formats up to 125 columns. An optional Adapter Kit permits card lengths up to 14 inches. Cards are available through Mountain Computer or any printer which handles card stock.
- The hopper holds 200 cards and automatically feeds at a rate of 120 cards per minute.
- Output data can be converted with a simple command from Hollerith format to ASCII, binary, hexadecimal, or a numeric format as well as multiple choice grader formats. With the grader formats, the darkest mark is selected in the case of erasures and remarking.
- The microprocessor based 1100A can be controlled manually via rear panel DIP switches or easily programmed for host computer control by means of a comprehensive command set of 30 instructions.

- For reliability, a diagnostic self-test mode is included which verifies that the electronics, optics, and feed mechanism are performing properly.

Applications

Business—
Inventory
Job costing
Time reporting and billing
Payroll
Surveys
Education—
Test scoring
Attendance reporting
Administration

Specifications

Operational Modes—
Demand and continuous feed.
Hopper Capacity—
200 cards
Feed Rate—
120 cards/minute
Card Type—
Pencil marked, preprinted, punched.
Card Dimensions—
Width—8.25 cm (3.25 in.)
Length—15.25 to 35.55 cm (6 to 14 in.)
Data Formats—
Converts Hollerith to ASCII, 2 binary, 2 Hexadecimal, Numeric, and 2 grader formats.

Interface—
RS-232C
Baud Rate—
16 standard rates from 50 to 19,200 baud.
Dimensions—
Width—16.5 cm (6.5 inches)
Height—19.0 cm (7.5 inches)
Depth—29.8 cm (11.8 inches)
Weight—
9.1 kg (20 lbs.)
Temperature—
+15°C to +35°C operating.
−40°C to +71°C storage.
Input Power—
115/220 Vac. 50–60 Hz ±10%
0.4 amps
Warranty—
90 Days
Items included are—
Card reader, power cord, 7½'' card catcher, weight, manual, 100 general purpose cards, and two diagnostic cards.
Optional Items—
14 inch card adapter kit.
General purpose cards.
Interface kit for Apple II which includes interface card and cable.
Cables for IBM PC, TRS-80 Model III, Commodore 8032, HP-85.

Clock/Calendar
Parallel Interface
Serial Interface

The CPS MultiFunction card is really three cards in one. It provides all the capabilities of a real time clock/calendar, parallel interface, and serial interface, all on one card. It not only saves you money, but also only occupies one slot in your Apple II®

Cables not included.

CPS MultiFunction

Features and Specifications

Features

- CPS is configured by our set up program which sets the parameters (such as baud rate, line feed, printer commands, etc.). Once you have configured your card, the information is stored in CMOS RAM with on-board battery backup, and need not be set up again for up to two years.
- You may also change parameters from the keyboard with control commands.
- On-board software features half/full duplex terminal operation. It works directly with a modem to allow direct access to communication networks.
- Serial and parallel outputs may be used simultaneously.
- "Phantom Slot" capability permits assigning each of the functions of the CPS card to different slots in your Apple II® without the card actually being in those slots.
- CPS's on-board intelligence lets it function in a wide variety of configurations, thereby providing software compatibility with most existing programs.
- Software is provided for use with DOS, CP/M, PASCAL.
- Control programs in the ROM reside in 240 byte "banks" and are executed in the $CN00 space when needed and therefore do not conflict with control programs of most other peripherals which typically occupy the $C800 space.
- Ready-made cables are available for connecting to most peripheral devices.

Applications

- A Clock—For date stamping reports and files, and timing events.
- A Parallel Interface—To connect a printer.
- A Serial Interface—To connect a

modem for communications or letter quality printer for word processing.

Specifications

Clock/Calendar

- One second resolution.
- Crystal controlled, high accuracy clock.
- Battery backed-up (2 years) with two AA standard alkaline batteries (provided).
- Provides seconds, minutes, hours, day of week, day of month, month, and year, in string format.
- Leap year is automatically handled.
- 24 hour military format or 12 hour with AM/PM format.
- ± .001% accuracy.

Parallel Interface

- Parallel functions permit the selection of the following features: auto-line feed, Apple tabbing, line length, delay after carriage return, lower to upper case conversion.
- Parallel Output Port:
  - Centronics standard—reconfigurable to other standards such as IDS, Diablo, and many more.
  - 8 data lines.
  - ± strobe out jumper option.
  - ± acknowledge jumper option.
  - supports Apple® parallel printer cables.
  - definable status bit hand-shaking.

Serial Interface

- Serial functions permit the selection of the following features: auto-line feed, terminal mode, Apple tabbing, line length, delay after carriage return, local echo of output characters, simultaneous serial/parallel output, lower to upper case conversion, discarding of extraneous LF's from serial input.
- Uses the powerful 2651 serial Pro-

grammable Communication Interface chip.
- 16 selectable internal baud rates from 50 to 19,200. On-board jacks for output and input (DC to .8M baud input).
- 5–8 bit character selection.
- Odd, even, or no parity selection.
- I/O interface conforms to RS-232C
  a) DTR, DSR, CTS, RTS, DCD, TXD, RXD.
  b) protective ground signal.
- Supports MCI 26-pin flat cable to DB25 type connector.
- Asynchronous features:
  - 1, 1½, 2 stop bit format.
  - false start bit detection.
- Synchronous features:
  - 1 or 2 synchronous characters.
  - transparent or nontransparent mode.
  - autosync or DLE-sync insertion.
  - sync or DLE stripping.

Warranty
  One year
Items Included:
  CPS MultiFunction card, Diskette, Operating Manual.

Optional Items:

Six foot cables for connecting the following devices:

Part #	Peripheral
01-156-01	Modems—serial to DB25 male.
01-156-02	Serial to DB25 female (pinout same as 01-156-01).
01-213	DB25 male to DB25 male.
01-263	IDS Printers—parallel to DB25 female.
01-264	Parallel to Centronics type connector for Epson/Centronics/OKI Data/C ITOH/Anadex
01-265	IDS Printers—serial to DB25 female.
01-266	Terminals, Printers, (i.e. Hazeltine, Epson) serial to DB25 male.
01-299	Diablo Terminal, Serial Printer, serial to DB25 female.

16 and 32K Memory Expander

Now you can expand the memory on your Apple II® to 64K or 80K by using the Ramplus+ card. The card is available in either a 16K configuration, expandable to 32K, or a fully configured 32K.

Ramplus+

Features and Specifications

Features

- Card installation is simple, just plug it in any I/O slot. No bothersome cables to connect or IC's to remove from the Apple® motherboard.
- You can install multiple Ramplus+ cards into the same Apple® or the Mountain Computer Expansion Chassis.
- Automatically move DOS and other programs to high memory using Ramplus+ Memory Expander.
- Lower power drain on the +12V DC Apple Language Card® (good for disc controllers).
- Compatible with all
  - industry standard 16K cards, and Z-80 Softcard.
  - industry standard software including DOS, CPM, Basic, Fortran, Cobol, Pascal, and Visicalc®.
- This card is also ideal for programmers since it provides detailed status of the previous state of the card.
- One year warranty.

Applications

- Provides all Apple Language Card® functions plus an additional 16K RAM.
- Have over 10K-bytes of additional Apple® main memory for program development and use.
- Expand the Visicalc® workspace to 34K with the 16K Ramplus+ card or to 49K when using the 32K Ramplus+ and the optional Ramplus+ Visicalc® Expander (RVE) software. Multiple Ramplus+ cards can be used for even larger workspace.
- Save continuous reloading of programs for faster throughput.

Specifications

- Multiple Ramplus+ cards can be installed for extended banked memory use.
- When Ramplus+ is in slots 1–7 it can be activated under user program control.
- Uses standard 16K MOS RAM's (4116).
- Provides detailed status of the previous state of the card—write enabled/write protected, first or second 4K byte selected, ROM or RAM mode, first or second 16K bank selected.
- Works as a language card in slot Ø or works in any slot in the Mountain Computer Expansion Chassis.

- Ramplus+ Memory Expander (RME) software determines if your slot Ø Ramplus+ card is 16K or 32K and performs the following:

  16K card—
  DOS will be transferred to the Ramplus+ card 16K bank. All DOS and resident language commands and an additional 10K of program memory are available.

  32K card—
  DOS and the non-resident language (Integer or Applesoft Basic) will be transferred to the Ramplus+ card. DOS will reside in the first 16K bank and the language will be moved to the second bank. This provides the user with both Integer and Applesoft Basic and an additional 10K or program memory.

Warranty
  One year

Items included are—
  Ramplus+ card
  Ramplus+ Memory Expander Diskette
  Operating manual
  Warranty card

Optional item—
  Ramplus+ Visicalc® Expander (only required when using one or more 32K Ramplus+ cards.

4

Real time for your Apple®.

The original real-time clock for the Apple II®, still unsurpassed for accuracy and quality. The Clock is easily accessed from BASIC using routines carried in on-board ROM, allowing you to read time and program time-dependent functions for virtually any interval. The only clock with milliseconds as well as day and month time stamps.

The Clock

Features and Specifications

Crystal-controlled accuracy of ±.001%, makes The Clock the most accurate timepiece for your Apple II.® On-board battery backup keeps your clock in operation, even during power outages. Time in 1 millisecond increments for periods as long as one year is possible with The Clock. More software has been written for The Clock than any other peripheral board made for the Apple II.® Program interrupts are, of course, standard. Software controlled interrupts are generated by The Clock which means you can call up schedules, time events, date printouts—all in real-time on a programmed schedule. Still the finest timepiece available for your Apple II®.

Extensive user documentation is supplied with The Clock. The Clock Operating Manual contains detailed instructions for card installation, setting the time, and reading the time. Integer BASIC and Applesoft BASIC program listings for setting and reading the time are also provided.

The Clock PASCAL diskette is necessary for interfacing The Clock to PASCAL based programs and is available from Mountain Computer.

Specifications

- On-board ROM for easy access from BASIC or machine language.

ROM provides month, day, hours, minutes, seconds, 1/10 second, 1/100 second, and 1/1000 second to the user. Read the time with a simple INPUT statement.

- On-board NiCad battery to prevent time loss during computer off times, for up to 4 days with power off. Battery charges from Apple bus.
- External battery charger included. Provides power to The Clock when the computer is off.
- Crystal controlled circuit for accurate time: ±.001%.
- Software selectable 1 second interrupts. Other interrupts are hardware selectable. May be used with other boards that interrupt in the Apple®.
- Applesoft program provided to set the time.
- Example programs supplied on diskette.
- A write protect switch prevents accidental changes in time.
- Clock needs only be set once every 388 days. Leap years are also accounted for.
- Documentation includes many examples of programs to use with your Apple® in any configuration. Programs include routines for measuring elapsed time, time intervals, as well as those for a standard calendar and clock.

```
         THE CLOCK DEMO DISKETTE
                VERSION 2.1
                 JUNE 1980
      THE CLOCK IS IN SLOT 3
      THIS DISK WAS LAST BOOTED ON
      AUGUST 19   AT  4:05  PM
      THE CURRENT TIME IS
      AUGUST 19   AT  4:08  PM

      THE DEMOS DEMONSTRATE THE CAPABILITIES
      OF MOUNTAIN COMPUTER'S THE CLOCK.
      ALL OF THE DEMOS ARE SELF EXPLANATORY,
      OR CONTAIN INSTRUCTIONS.
      THEY MAKE EXCELLENT DEMOS.
      TRY THEM!   PRESS RETURN TO CONTINUE--?■
```

The Clock demo software.

Applications

Alarm Control
Stopwatch
Program Control
Real-Time Readings from a
    Spectrometer in a Laboratory
Time/Date Stamp
Real-Time Data Acquisition
    and Control
Event Timer
Reports, Time Delays, Elapsed
    Events, etc.
Timer for Real-Time Controls
Time Business Programs
Business (General Ledger,
    File Listings, etc.)
Timing for Instrumentation
Laboratory Experiments
Process Time Cards
Biological Research and
    Development
Measure Interactive
    Response Time

Expand your Apple II® Peripheral Capacity.

Expansion Chassis™ gives you 8 more bank-selectable peripheral slots for your Apple II®. It allows you to access up to 15 peripheral cards. Expansion Chassis has a heavy-duty power supply that allows you to run a large number of peripherals without straining the power supply in the Apple.

Expansion Chassis

Features and Specifications

The Expansion Chassis is the answer to how to use the multitude of peripheral cards available for the Apple in the most professional manner.

Expansion Chassis allows you to do a complete demonstration on any Apple system without having to open the chassis and be pulling cards and replacing IC chips. It is probably the best tool for selling complete Apple systems ever devised.

For those who need more slot capabilities, the Expansion Chassis is, again, the solution. Expansion Chassis can provide a quieter, cleaner, more powerful bus connection for those high-performance cards. In addition, with the bank-selectable capabilities, a total of four Expansion Chassis can be hosted by one Apple II®. This means the additional capability of adding banks of RAM or ROM is possible for those using Apple-based systems on a larger scale. Expansion Chassis also provides you with a cooler environment than the host Apple II® computer.

The Expansion Chassis is compatible with Pascal, as well as Integer BASIC, Applesoft BASIC, and the monitor. It can be controlled via software, hardware, or a combination of both. It can be selected and/or deselected via software or by pressing the front panel SELECT/DESELECT button.

Specifications

- Eight peripheral I/O slots identical to the Apple bus.

- Compatible with Apple II software.

- Compatible with most non-Mountain computer peripherals.

- Expansion Chassis' interface card plugs into any slot in your Apple and connects to Expansion Chassis via a fully buffered 3' long I/O cable.

- Expansion Chassis' power supply provides 30 watts continuous power for peripherals.

- Operating manual with full details of installation and use.

- Physical dimensions: 14¾"W x 6"H x 11⅝"D.

- Up to eight additional peripheral slots bank-selectable from your Apple. This means you can oper-

ate either the peripheral cards in the Apple or the cards in the Expansion Chassis by switching from one to the other.

- Select/Deselect Expansion Chassis with front panel switch or under software control—even from your programs. Front panel LED indicates "In Use" when selected.

- Expansion Chassis' power supply is independent of the Apple's.

- Expansion Chassis' power supply turns ON or OFF by sensing whether your Apple is ON or OFF. Front panel LED indicates "Power —ON/OFF."

- Language cards (Applesoft or Integer ROM Cards or Language Expansion Card) remain active in the Apple even when Expansion Chassis is selected.

Applications

Demonstration Device for Dealers and Salespeople
Process Control Box
Expandable Peripheral Device
Tester for Peripherals
Development Device

The instrument anyone with an Apple II® can play.

MusicSystem sets new standards for computer-generated music. A digital synthesizer with 16 voices, stereo output, and polyphonic multi-voice chords—all via the Apple II®. This is a true music synthesizer, fully programmable for each voice it creates with instrument definitions and music dynamics. Frequency resolution in .5Hz steps, and even graphical input of sheet music using standard music notations.

MusicSystem

Features

MusicSystem is usable by anyone, with or without technical music or computer background. MusicSystem is a fun way to get involved in both computers and music education. It is a dynamic music theory teaching instrument, from basic elementary music theory to advanced harmonic concepts. Graphical music editing is simple using the light pen (provided), game paddles, or the keyboard. Pre-entered music is provided for immediate playing and enjoyment.

MusicSystem allows the user to enter and edit musical scores, create and modify instrument definitions, and combine the scores and instrument definitions into playable files for output to any stereo system.

MusicSystem has the ability to specify note frequency histories. Most synthesizers allow you to either specify the amplitude envelope or vary the waveform when the note is played. MusicSystem provides both these features. In addition, it has the ability to supply up to fifteen relative frequency changes during each note. This feature (controlled by the user during the instrument definition process) may be used to produce vibrato or tonguing effects.

MusicSystem Software

MusicSystem contains four main programs: Music Editor, Instrument Definer, Music Merger, and Music Player.

System software is accessed via a series of nested menus (refer to the figure below). A menu item selection will result in either a direct action, or will display another menu.

MusicSystem Editor Program.

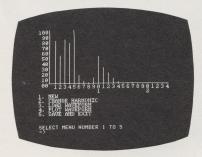Music Editor divides the monitor into two areas: the upper two-thirds of the screen provides a graphic display of a section of the music composition; the lower portion of the screen contains editor menu selections, command lines and status. The figure below displays the Music Editor main menu. Menu selections are controlled by game paddle or light pen (included with the Music-System). Three additional Editor graphic menus (subordinate to the main menu) are included.

MusicSystem main menu.

Instrument Definer provides the tools for creating and synthesizing a wide range of instruments (brass, percussion, woodwind and/or string). Each instrument definition is composed of one or more frequency sources, each with a definable wave-
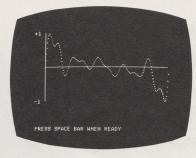
form, adjustable amplitude, selectable attack envelope, sustain/decay rate control, and frequency profile.

MusicSystem Instrument Definer Program.

Music Merger provides the capacity to merge two composition files. It also lets you copy composition files.

Music Player compiles the Music Editor Composition files and adds the instrument requirements generated by the Instrument Definer files to produce the final Player files. These files produce the final musical output to the stereo system.

Waveform plotting via Mountain Computer MusicSystem.

Mountain Computer provides a comprehensive operator's manual with the MusicSystem. Within its 130 pages are chapters on system operation, descriptions of all system programs, and an extensive section on background and theory.

The manual makes extensive use of step-by-step examples that introduce you to each of the four programs. The manual also includes a complete list of error messages and their causes. It also contains reference material that describes the hardware, system file formats, and hardware control via your own software.

Applications

Transcribing Sheet Music
Sound Creator & Generator
Digital Synthesizer
Polyphonic Creator
Sheet Music Printer
Scientific Education
Sound Effects
Studio Sound
Performance
Research in Music
Development of Intonation Theory
Creating Music
Historical Dance Reconstruction
Vocal Accompaniment
Background Music
Emotional Music
Entertainment
Psychophysical Experimentation
CAI for Music
Commercial (T.V.) Music

Specifications

Musical Features

• 16 part digital synthesis, 8 parts per stereo channel.

• Waveforms, envelopes and amplitude are fullly programmable for each of the 16 voices plus overall amplitude control.

• 32 kHz sample rate

• .5Hz step frequency resolution

• Graphic input of sheet music with standard musical notation using light pen paddles or keyboard.

• No programming experience is required to use the MusicSystem; ideal for the computer hobbyist, professional or amateur musician and children.

Hardware

• Dual Music Boards hardwired and ready to install. Each MusicSystem is fully tested.

• Photo-sensitive light pen for input and editing of musical data

• RCA-type standard audio output jacks for connection to stereo amplifier or headphones.

• All connecting cables are provided.

• Quick and simple installation is described in the Operating Manual.

• Contact: Syntauri Corporation
3506 Waverly Street
Palo Alto, CA 94306
(415) 494-1017
or: Passport Designs
785 Main Street, Suite E
Half Moon Bay,
CA, 94019
(415) 726-0280
for possible real-time keyboards and educational software compatible with the MusicSystem.

Software

• Operating System designed especially for the MusicSystem

• Master diskette includes all software for the system ready to run; no compiling or modifications necessary.

• Music Editor, a full capability graphics editor for realistic input of musical data.

• Music Player, a special "run-time" processor of musical data allows you to choose instruments and spacial location each time a song is played.

• MusicSystem Operating Manual includes installation, a tutorial, full reference details, hardware description, theory of additive synthesis, etc.

• Hard copy musical score output through Apple Silentype printer.

Power for your Apple II®!

A board whose added features can turn the Apple II® computer into one of the most powerful personal computers available today. ROMPLUS+ provides 6 sockets to accept individually addressed 2K ROMs or EPROMs.

Romplus+

Features and Specifications

ROMPLUS+ offers 6 sockets for ROMs or EPROMs plus a "scratch pad" RAM and sophisticated firmware on ROMPLUS+ allows one, two, or more chips to be used simultaneously for the programs longer than 2K. ROMPLUS+ also allows you to add additional ROM memory by the use of additional boards. For expanded capability and magnitudes greater speed, the ROMPLUS+ is your key to system expansion.

Specifications

• Holds 6—2716 5 volt EPROMs or ROM equivalent. Each holds 2048 bytes.

• Each ROM resides in the Apple $C800 space and any ROM may be turned on and used when desired.

• An on-board control ROM residing in the CN00 space is activated with a PR#N or IN#N from BASIC. It controls the 6 ROMs and handles communication between ROMs, including subroutine calls from one ROM to another which allows use of programs larger than 2K.

• 255 bytes of on-board RAM for scratch pad or data storage. It resides at CF00—CFFE. This RAM space is software selectable between this RAM and the top of any ROM you may select.

• Two TTL inputs are available for special control. One may be used with Keyboard Filter for "Shift Key" operation. The TTL Connector Cable is available for this connection. See product list, page 15.

• Compatible with CopyRom and Keyboard Filter Rom (sold separately) See page 15.

Applications

Generate ROM software for customer hardware interface.
Place often used utilities in ROM.
Create non-standard character sets.
Business and educational programs.
Process control software.
Graphics routines.
Programming aids.
Dedicated software systems without disk drives.

Available ROMS for Mountain Computer's Romplus+

SOFT CTRL SYSTEMS
Box 599
West Milford, NJ 07480

Applesoft Editrom
Disk Copy/Space
Catalog Command
Applesoft Renumber/Mergerom
Applesoft Utility
Format
Sort
FID

HIGHLANDS COMPUTER
SERVICES
14422 S.E. 132nd
Renton, WA 98055

EPROM #1
EPROM #2
EPROM #3
MCAT 2.0
CRAE 2.0
Applesoft Editor

SYNERGISTIC SOFTWARE
5221 - 120th S.E.
Bellevue, WA 98006

Program Line Editor

Program Eproms with your Apple II®.

ROM based firmware permits a "power-up and go" configuration. Frequently used programs can now be installed on firmware by use of the RomWriter. By using ROM, it frees up RAM memory space for companion programs and there's never a need to be loaded from a disk. Add speed and ease of use to your system with programmable ROMs.

RomWriter

Features and Specifications

Virtually foolproof programming. Specify a Start and End address in the EPROM and either a Disk File name or a starting address in memory. Desired code will be BURNed followed by a VERIFY. Additionally, existing EPROM code can be merged with desired changes to facilitate EPROM debugging. Easy data entry and high reliability are designed into the RomWriter. Programmed EPROMs can be RUN while residing on RomWriter or can be transferred to the Mountain Computer ROM-PLUS+ board.

For speed and reliability, programmed EPROMs are the answer you've been looking for, and now you have the capability of programming them yourself. You, yourself, can enhance the power of your Apple II® system by the use of EPROMs.

The PROM burner program, included with RomWriter.

Specifications

Hardware
• Programs 2716 EPROMs—5V, 2K.
• Installs in any peripheral slot (except #0).
• Zero insertion force socket (ZIF). Mechanical lever opens up pin holders to drop in an EPROM.
• On-board Bat Handle switch for power off the ZIF Socket permits EPROM to be Installed/Removed without power-down of computer.
• On-board DIP switch provides: Write Protect—provided to prevent accidental overwriting of EPROMs while RUNning from RomWriter. $CFFF-Off—provided to suppress execution of this command (which shuts off all peripherals in the Apple system when executed) while programming or later while RUNning.
• Programmed EPROMs can be RUN while residing on RomWriter board.
• Optimum voltage and current for trouble-free programming.
• Complete 2716 programmed in under 2 minutes (50 msec/byte).

Software
• Diskette furnished.
• Programs require Applesoft firmware.
• Programming procedure:
a. Specify a Start and End address in the EPROM.

b. Specify a Disk File Name or
c. Specify a Starting address in memory.
• Features provide screen-oriented editing during the procedure to enter memory parameters for the EPROM to be programmed.
• After the memory parameters have been entered, desired code will be BURNed followed by a VERIFY. If the EPROM does not VERIFY, prompts are provided for re-programming.
• Existing EPROM code can be merged with desired changes to facilitate EPROM debugging. This permits rapid incorporation of updated code from disk files without time-consuming reassembly.
• All or part of a 2716 EPROM may be programmed.
• Programmed EPROMs can be RUN on RomWriter.
• Programmed EPROMs can be RUN on ROMPLUS+.

Applications

Product Emulator
Software Development
Operation Testing
Software Drivers
Energy Control
Instrument Control
Data Acquisition
Software Security
Special Handicap Subroutines

10

Real world Interface for your Apple II®.

Super-fast conversion time permits high sample rate applications not possible with slower cards.

A/D + D/A is your answer for real world interface in commercial, scientific, and industrial data acquisition and control functions.

Cables not included.

A/D+D/A

Features and Specifications

A/D+D/A is a single PC card allowing 16 channels of analog to digital input and 16 channels of digital to analog output. Incredibly fast 9 microsecond conversion time with full 8-bit resolution makes this the most desirable interface card for your Apple II®. In any application when linking your Apple II® to the outside world for accurate fast measurements or data acquisitions, A/D + D/A is the solution. Operating manual contains sample applications with schematics, part lists, and guides for easy start-up. Self-test diagnostic software is, of course, included.

A/D + D/A self-diagnostic software, included with the package.

A/D Features

- 16 input analog channels—software selectable on a READ command.
- Resolution is 8 binary bits (including sign bit).
- Full scale and zero adjustments.

- Conversion method—successive approximation.
- Conversion starts on a software READ command.

A/D Specifications

- DC Input impedance $\simeq$ 1 meg. ohm.
- Analog input voltage—±5 volts maximum.
- Channel conversion time—9 microseconds.
- Accuracy—
  a. Absolute $\simeq$ ±3% FSR
  b. Relative $\simeq$ ±1 LSB

D/A Features

- 16 output analog channels—software selectable on a WRITE command.
- Full scale and zero adjustments.

D/A Specifications

- Monotonic outputs.
- Analog output voltage—±5 volts maximum.
- Output current (source or sink) 2 milliamps.
- Accuracy—
  a. Absolute $\simeq$ ±3% FSR
  b. Relative $\simeq$ ±1 LSB
- Output slew rate $\simeq$ 10 volts/ millisecond.
- Dynamic output impedance $\simeq$ 10 ohms.

A/D+D/A Cables

Two 6 foot cables are available for connecting the A/D+D/A Card 16 channel analog input and output to the sending or receiving devices. System self test is easy, just connect both cables to the card and connect the DB25 connectors together. The 01-00156-01 cable provides an interface between the A/D+D/A card and a DB25 Male connector. The 01-00156-02 provides an interface between the card and a DB25 Female connector. Both cables can be purchased as an assembly by ordering 01-00239-01. Either cable can be connected to the card input or output channels.

Applications

Environmental Sensing
Data Acquisiton
Monitoring Device
Research Measurement
Imaging Output
Auto. Temperature Control
Physiology Evaluation
Production of Noises, Data Input, Production of Speech
Digital Music Synthesis/Analysis
Stage Lighting Control
Scientific Instrumentation
Lab Instrumentation
Oil Field Monitoring
Ultrasonic Analog Input
Audio-Visual Automation
Combustion Research
Medical Waveform Analysis

Digital Speech is now a two-way street.

With a Supertalker installed in your Apple II® or IBM® P.C. you will be able to digitize your speech and store it in memory. Supertalker can recall this stored information and convert it to audio for output to the speaker system. It is true human voice reproduction, not simulated voices.

Supertalker SD200 (Apple II® Version)
II (IBM® P.C. Version)

Features and Specifications

Features

• Reproduces the actual human voice much like a tape recorder. Provides inflection not found with voice synthesizers.

• Human speech output under program control made easy with fully documented operating system software.

• Stores about 120 sec. real-time speech at 2Kbyte digitizing rate on one diskette.

• Compression techniques are used to minimize storage requirements.

• Several digitizing rates are available to control the quality of reproduction.

• Comprehensive menu driven software is included which enables easy creation and editing of phrases.

• Phrases can be accessed with supplied software or with BASIC programs.

• The IBM® Supertalker also contains 32K of on-board RAM which is accessible for other applications.

Applications

Talking programs for—
Instruction of spelling and math
Language Training
Speech Therapy
Computer output for the blind and handicapped
Voice Controlled Appliances
Security Systems

Specifications

• Frequency Response: Filtered to 300 Hz-3000 Hz human voice range for OUTSTANDING clarity.

• On-board two watt audio amplifier to drive speaker provided, or output through a stereo or PA system.

• Four output volume settings which are software selectable. Supertalker II also has a volume control knob.

• Software selectable digitizing rates:
Apple II®—0.5, 1, 2, 4 Kbyte/sec.
IBM® P.C.—2, 3, 4 Kbyte/sec.

• Apple II® diskette also contains two ready to run programs; ACCENT, a talking language translator, and COLOR MATH, a talking arithmetic game.

Minimum System Configuration:
Apple II®—48K
IBM® P.C.—64K

Warranty—One Year

Items Included—
Supertalker Card
Diskette
Loudspeaker
Microphone
Operating Manual

Put your S-100 Bus Computer on the Clock.

For your S-100 bus computer, real time calendar and clock applications become simple and accurate. Provides real time and program time dependent functions for virtually any interval from 100 microseconds to 100,000 days. Real time interrupts, vectored or restart types are possible with the 100,000 Day Clock.

100,000 Day Clock

Features and Specifications

Ideal for making measurements, generating interrupts, and timing events. Time and date transaction printouts and date stamps are easily achieved. The 100,000 Day Clock can be used with most BASIC programs.

15 I/O ports for the time and 1 I/O port for interrupts allow you to assign the ports to any 16 ports on your 8080 or Z-80 computer through DIP switches. On-board battery backup and low power consumption of the 100,000 Day Clock mean that your clock will stay up for days . . . . even if the power goes down. Crystal controlled accuracy of ±.001% is also standard on the 100,000 Day Clock.

The operating manual contains complete instructions for operation including installation and setup. The Software section contains routines with listings for setting and reading the clock (including month, day and year). A detailed section on the hardware theory of operation, including a schematic, is also provided.

Specifications

- Utilizes 16 I/O ports of a Z-80 or 8080 system. User selectable with Dip Switches. 15 I/O ports for the time, one port for interrupt.

- Crystal Controlled Circuit for accurate time: ± .001%.

- Time in 100μS increments for periods up to 100,000 days (273 years).

- On-board NiCad battery to prevent time loss for up to 4 days with power off. Charges from computer bus.

- External battery charger included.

- A write protect switch prevents accidental changes in time.

- Software selectable interrupts for intervals of 100μS, 1mS, 10mS . . . 1 sec, 10 sec, 1 min, . . . , 1 day, 10 days, . . . etc.

- Interrupts can be configured for restart addresses or for a vectored interrupt system.

- Digit transition information insures valid interpretation of time.

- One digit of time is read from each port. To set the time simply write the correct time to the ports.

- Software documentation includes calendar routines, and an interrupt handling package, as well as examples of reading and setting the time.
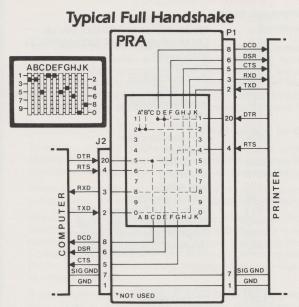
13

The RS-232C DB25 Pin Reconfiguration Adapter.

The Mountain Computer Pin Reconfiguration Adapter (PRA) enables the user to instantly mate almost any serial I/O device to a computer by rerouting the RS-232C signals. The PRA eliminates the task of fabricating special cables or resoldering existing cable wiring to achieve a signal interface between two units.
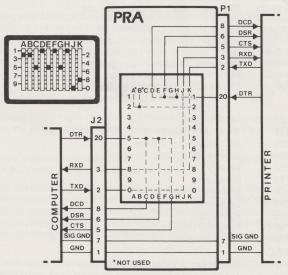
PRA

Features and Specifications

The PRA can reconfigure to both full handshake and typical no handshake configurations. The PRA is the simple, logical solution to RS-232C reconfiguration needs.

Typical Full Handshake

Typical No Handshake

Three unused jumper points (B, 2, and 3) are available for routing additional signals through the matrix switch. For additional signal handling, P1 pin 11 (unassigned) is also routed to the switch.

Blank Diskettes

Mountain Computer has always supplied diskettes and software with their cards and due to our large-volume buying, we have diskettes, unlabeled and in Mountain Computer jackets, available for purchase by our customers. Bulk orders of minimum orders of 100 diskettes are available and all of you needing high quality diskettes should take advantage of this unbelievable price —$275.00 per 100 diskettes.

Prototyping Card

Mountain Computer has not forgotten the hard-core hobbyist. Mountain Computer's prototyping card for both the Apple II® and Apple III® is available for all of your custom work and design needs. This prototyping card allows you, the dedicated user, to custom design and wrap your own interface cards.

PRODUCT NUMBERS (use when ordering)

PART NUMBER	PRODUCT

DATA STORAGE

DYNAMIC Disk Systems

Apple II

01-445-01	5M Byte Disk System
01-445-02	10M Byte Disk System

Apple III

01-494-01	5M Byte Disk System
01-494-02	10M Byte Disk System

IBM P.C.

01-482-01	5M Byte Disk System
01-482-02	10M Byte Disk System

DATA ENTRY

01-353	Model 1100A Card Reader
01-435	Model 1100A Interface Kit for Apple II
01-398-01	14" Card Holder & Adapter

Model 1100A I/O Cables (6' Long)

01-213	Model 1100A to Apple Serial Card
01-266	Model 1100A to HP-85
01-433	Model 1100A to Commodore 8032 via TNW-2000
01-434	Model 1100A to IBM P.C.
01-441	Model 1100A to TRS-80 Model III

Cards (Box of 2000)

26-486-01	40 Column General Purpose Card
26-486-02	80 Column General Purpose Card
26-487-01	50 Answer Test Scoring Card
26-487-02	100 Answer Test Scoring Card
26-488-01	50 Answer Survey Card
26-495-01	80 Column Mark Sense Punch Card

BOARD LEVEL

Apple II

01-166-01	Expansion Chassis
01-166-02	Expansion Chassis (220V)
01-214	CPS MultiFunction (includes BASIC and Z-80 Softcard/PASCAL diskettes) (See Cables)
01-227	MusicSystem
01-229	The Clock (Includes BASIC/PASCAL diskette)
01-230	A/D + D/A (See Cables)
01-231-01	Supertalker SD200
01-232	Introl/X-10
01-233	Romplus+
01-234	Keyboard Filter Rom[1]
01-235	CopyRom[1]
01-236	RomWriter
01-298-01	Ramplus+ (16K)
01-298-02	Ramplus+ (32K)

IBM P.C.

01-492-01	Supertalker II (Includes 32K RAM)

S-100

01-228	100,000 Day Clock

CABLES (6' Long)

CPS I/O Cables

01-156-01	Modems-Serial to DB25 Male
01-156-02	Serial to DB25 Female (pinout Same as 01-156-01)
01-213	DB25 Male to DB25 Male
01-263	IDS Printers - Parallel to DB25 Female
01-264	Parallel to Centronics Type Connector for Epson/ Centronics/OKI Data/ C ITOH/ Anadex
01-265	IDS Printers - Serial to DB25 Female
01-266	Terminals, Printers (i.e. Hazeltine, Epson) Serial to DB25 Male
01-299	Diablo Terminal, Serial Printer, Serial to DB25 Female

A/D + D/A I/O CABLES

01-156-01	A/D + D/A Header to DB25 Male
01-156-02	A/D + D/A Header to DB25 Female
01-239	I/O Cable Assembly[2]

SOFTWARE SUPPORT

12-215	CPS MultiFunction BASIC Diskette
12-417	CPS MultiFunction Z-80 Softcard/PASCAL Diskette
12-246	Supertalker SD200 Diskette
12-247	Keyboard Filter Diskette (Requires Romplus+)
12-248	Introl/X-10 Diskette
12-249	RomWriter Diskette
12-250	MusicSystem Diskette Set
12-251	A/D + D/A Diskette
12-253	Demo Programs, Free Running
12-349	Ramplus+ Diskette
12-436	Ramplus+ Visicalc® Expander
12-420	The Clock BASIC/PASCAL Diskette
12-483	Supertalker II Diskette

DYNAMIC Disk System

Apple II

12-445-01	5M Byte Disk System Diskette
12-445-02	10M Byte Disk System Diskette

Apple III

12-494-01	5M Byte Disk System Diskette
12-494-02	10M Byte Disk System Diskette

IBM P.C.

12-482-01	5M Byte Disk System Diskette
12-482-02	10M Byte Disk System Diskette

Advanced Blackjack Program

29-516-01	Cassette (for HP-85)
12-517-01	Diskette (for HP-85, HP-86, HP-87)

OPERATING MANUALS

11-166	Expansion Chassis
11-214	CPS MultiFunction Reference Manual
11-431	CPS MultiFunction Z-80 Softcard/PASCAL
11-227	MusicSystem
11-229	The Clock
11-363	The Clock PASCAL
11-230	A/D + D/A
11-231	Supertalker SD200
11-232	Introl/X-10
11-233	Romplus+
11-234	Keyboard Filter Rom
11-235	CopyRom
11-236	RomWriter
11-298	Ramplus+
11-492	Supertalker II
11-228	100,000 Day Clock
11-353	Model 1100A Reference Manual
11-445	DYNAMIC Disk System (Apple II)
11-494	DYNAMIC Disk System (Apple III)
11-482	DYNAMIC Disk System (IBM P.C.)

MISCELLANEOUS

01-240	External Charger
01-241	TTL Connector[3]
01-242	Prototyping Card (Apple III)
01-243	RS232 DB25 Pin Reconfiguration Adapter
12-271	Blank Diskettes (Package of 100)

[1]ROM Chip only. Will work only when installed on Romplus+ board.

[2]Consists of two cables. One 01-156-01 and one 01-156-02. Can connect together to use A/D + D/A self-test software.

[3]Connector and cable to attach to Romplus+ TTL inputs. Provides for Keyboard Filter "shift key modification."

Due to continuing research and development activities leading to potential product changes, prices and specifications are subject to change without notice.

Apple II, Apple III and Apple Serial Card are registered trademarks of Apple Computer, Inc.
IBM is a registered trademark of International Business Machines, Inc.
TRS-80 is a registered trademark of Tandy, Corp.
Commodore 8032 is a trademark of Commodore Business Machines, Inc.
HP-85, HP-86, and HP-87 are trademarks of Hewlett Packard, Inc.
Z-80 is a registered trademark of Zilog, Inc.
Softcard is a trademark of Microsoft, Inc.
Visicalc is a trademark of Visicorp, Inc.

Mountain™ Computer
INCORPORATED

300 El Pueblo Rd. Scotts Valley, CA 95066 (408) 438-6650 TWX: 910 598-4504

RETAIL PRICE SCHEDULE
October 1, 1982

Part Number	PRODUCT	Retail
DATA STORAGE		
DYNAMIC Disk Systems		
Apple II		
01-445-01	5M Byte Disk System Complete	$2,695.00
01-445-02	10M Byte Disk System Complete	3,395.00
Apple III		
01-494-01	5M Byte Disk System Complete	2,495.00
01-494-02	10M Byte Disk System Complete	3,195.00
IBM P.C.		
01-482-01	5M Byte Disk System Complete	2,295.00
01-482-02	10M Byte Disk System Complete	2,995.00
DATA ENTRY		
01-353	Model 1100A Card Reader	1,495.00
01-435	Model 1100A Interface Kit for Apple II	199.00
01-398-01	14" Card Holder & Adapter	29.95
Model 1100A I/O Cables (6′ long)		
01-213-01	Model 1100A to Apple Serial Card	24.95
01-266-01	Model 1100A to HP-85	24.95
01-433	Model 1100A to Commodore 8032 via TNW-2000	24.95
01-434	Model 1100A to IBM	24.95
01-441-01	Model 1100A to TRS-80 Model III	24.95
Cards (Box of 2000)		
26-486-01	40 Column General Purpose Card	60.00
26-486-02	80 Column General Purpose Card	60.00
26-487-01	50 Answer Test Scoring Card	60.00
26-487-02	100 Answer Test Scoring Card	60.00
26-488-01	50 Answer Survey Card	60.00
26-495-01	80 Column Mark Sense Punch Card	60.00
BOARD LEVEL		
Apple II		
01-166-01	Expansion Chassis	750.00
01-166-02	Expansion Chassis (220V)	795.00
01-214	CPS MultiFunction (Includes BASIC and Z-80 Softcard/Pascal diskettes) (see cables)	239.00
01-227	MusicSystem	395.00
01-229	The Clock (Includes BASIC and Pascal diskette)	280.00
01-230	A/D + D/A (see cables)	350.00
01-231	Supertalker SD200	199.00
01-232	Introl/X-10	200.00
01-233	Romplus+	155.00
01-234	Keyboard Filter Rom[1]	55.00
01-235	CopyRom[1]	55.00
01-236	RomWriter	175.00
01-298-01	Ramplus+ (16K)	189.00
01-298-02	Ramplus+ (32K)	219.00
12-436	Ramplus+ Visicalc® Expander software	100.00
IBM P.C.		
01-492-01	Supertalker II (Includes 32K RAM)	565.00
S-100		
01-228	100,000 Day Clock	375.00

Part Number	PRODUCT	Retail

CABLES (6' Long)

CPS I/O Cables

Part Number	PRODUCT	Retail
01-156-01	Modems-Serial to DB25 Male	24.95
01-156-02	Serial to DB25 Female (Pinout same as 01-156-01)	24.95
01-213	DB25 Male to DB25 Male	24.95
01-263	IDS Printers-Parallel to DB25 Female	24.95
01-264	Parallel to Centronics Type Connector for Epson/Centronics/OKI Data/ C ITOH/Anadex	24.95
01-265	IDS Printers-Serial to DB25 Female	24.95
01-266	Terminals, Printers (i.e. Hazeltine, Epson) Serial to DB25 Male	24.95
01-299	Diablo Terminal, Serial Printer, Serial to DB25 Female	24.95

A/D + D/A I/O Cables

Part Number	PRODUCT	Retail
01-156-01	A/D + D/A Header to DB25 Male	24.95
01-156-02	A/D + D/A Header to DB25 Female	24.95
01-239	I/O Cable Assembly[2]	49.90

SOFTWARE SUPPORT

Part Number	PRODUCT	Retail
12-250	MusicSystem Diskette Set	40.00
Advanced Blackjack program		
29-516-01	Cassette (for HP-85)	49.00
12-517-01	Diskette (for HP-85, HP-86, HP-87)	39.00
All other product diskettes		20.00

OPERATING MANUALS

All operating manuals		10.00

MISCELLANEOUS

Part Number	PRODUCT	Retail
01-240	External Charger	12.00
01-241	TTL Connector[3]	3.00
01-242	Prototyping Card (Apple III)	49.95
01-243	RS232 DB25 Pin Reconfiguration Adapter	59.95
12-271	Blank Diskettes (Package of 100)	275.00

[1]ROM Chip only. Will work only when installed on Romplus+ board.

[2]Consists of two cables. One 01-156-01 and one 01-156-02. Can connect together to use A/D + D/A self-test software.

[3]Connector and cable to attach to Romplus+ TTL inputs. Provides for Keyboard Filter "shift key modification".

Due to continuing research and development activities leading to potential product changes, prices and specifications are subject to change without notice.

Limited Warranty for Mountian Computer, Inc.
DYNAMIC Disk Systems

Your factory-built Mountain Computer, Inc. product is warranted against defects in materials and workmanship for a period of 6 months from the date of delivery. We will repair or replace products that prove to be defective during the warranty period, provided they are returned to Mountain Computer, Inc. No other warranty is expressed or implied. We reserve the right to refuse to repair any product that, in our opinion, has been subject to abnormal electrical or mechanical abuse. Before sending your Mountain Computer, Inc. unit in for repair, contact our Customer Service Representative for a return Authorization Number.

Limited Warranty for Mountain Computer, Inc.
Model 1100A Card Reader

Your factory-built Mountain Computer, Inc. product is warranted against defects in materials and workmanship for a period of 90 days from the date of delivery. We will repair or replace products that prove to be defective during the warranty period, provided they are returned to Mountain Computer, Inc. No other warranty is expressed or implied. We reserve the right to refuse to repair any product that, in our opinion, has been subject to abnormal electrical or mechanical abuse. Products less than one year out of warranty will be repaired for a nominal flat fee. Before sending your Mountain Computer, Inc. unit in for repair, contact our Customer Service Representative for a Return Authorization Number.

Limited Warranty for Mountain Computer Inc.
Peripheral P.C. Boards

Your factory-built Mountain Computer Inc. product is warranted against defects in materials and workmanship for a period of one year from the date of delivery. We will repair or replace products that prove to be defective during the warranty period, provided they are returned to Mountain Computer Inc. No other warranty is expressed or implied. We reserve the right to refuse to repair any product that, in our opinion, has been subjected to abnormal electrical or mechanical abuse. Products less than two years out of warranty will be repaired for a nominal flat fee. Before sending your Mountain Computer Inc. unit in for repair, contact our Customer Service Representative for a Return Authorization Number.

Limited Warranty for Mountain Computer Inc. Software

Computer software programs cannot replace your sound business judgement or make decisions for you. You, therefore, assume complete responsibility for any decisions made or actions taken based on information obtained using Mountain Computer Inc. software programs and instructional materials.

Mountain Computer Inc. software and the attached instructional material are sold "AS IS," without warranty as to their performance. The entire risk as to the quality and performance of the computer is assumed by you.

However, to the original purchaser only, Mountain Computer Inc. warrants the software diskette or cassette to be free from defects in materials and faulty workmanship under normal use and service for a period of one (1) year from the date of purchase. If, during this one year period, a defect in the diskette or cassette should occur, it may be returned to Mountain Computer Inc. or an authorized Mountain Computer Inc. dealer for replacement of the cassette or diskette without charge to you. Your sole and exclusive remedy in the event of a defect is expressly limited to replacement of the diskette or cassette as provided above.

If the failure of the diskette or cassette, in the judgement of Mountain Computer Inc. resulted from accident, abuse or misapplication of the diskette or cassette, then Mountain Computer Inc. shall have no responsibility to replace the diskette or cassette under the terms of this warranty. In such an event, replacement of the diskette or cassette is available to the original purchaser at a nominal charge.

The above warranties for goods are in lieu of all warranties, express, implied or statutory, including, but not limited to, any implied warranties of merchantability and fitness for a particular purpose, and of any other warranty obligation on the part of Mountain Computer Inc. In no event shall Mountain Computer Inc. or anyone else who has been involved in the creation and production of this product be liable for indirect, special or consequential damages, such as, but not limited to, loss of anticipated profits or benefits resulting from the use of this product, or arising out of any breach of this warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

For technical information regarding Mountain Computer, Inc. products contact Customer Service Department (408) 438-4933.

Mountain™ Computer Inc.

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TWX: 910 598-4504   (408) 438-6650
Customer Service   (408) 438-4933

Located in the Santa Cruz Mountains of Northern California, Mountain Computer, Inc. is a computer peripheral manufacturer dedicated to the production of user-oriented high technology products for the microcomputer.